

UNITED STATES FOR NON-DEPENDENCE



An Analysis of the Impact of Opioid Overprescribing in America

September 26, 2017



Table of Contents

02	Introduction	<hr/>
03	Key Findings	<hr/>
05	Methodology	<hr/>
06	Opioid Use and Misuse in America	<hr/>
07	Snapshot of Opioid Prescribing Across the Nation	<hr/>
09	The Role of Opioids in Treating Postsurgical Pain	<hr/>
14	The Rise of Immediate-Release Opioids	<hr/>
15	Looking Ahead: The Impact of Reducing Opioid Prescribing	<hr/>
16	Appendix	<hr/>
20	About the Commentators	<hr/>
21	References	<hr/>

Introduction

This report is the culmination of research to identify and better understand the populations most at risk from exposure to prescription opioids as federal and state agencies increase their attention and resources to combatting the opioid crisis. This research provides a greater understanding of those vulnerable populations and will help to better educate patients and prescribers about opioid risks.

This is the second phase of a research program that began in 2016 with a national survey that found patients self-reported far higher rates of opioid dependence and addiction following opioid exposure to treat acute postsurgical pain than had previously been known. The QuintilesIMS Institute was engaged to validate those initial findings, to examine national prescription opioid trends, as well as age, gender and geographical trends in opioid prescribing, and to further examine the role that opioid-based postsurgical pain control plays in contributing to the nation's opioid epidemic. The QuintilesIMS Institute conducted the analyses independently with funding from Pacira Pharmaceuticals, Inc.

Key Findings

Surgery-related overprescribing results in **3.3 billion** unused pills available for misuse

Notwithstanding increased efforts to reduce opioid use in the surgical setting, nine in 10 patients receive opioids to manage postsurgical pain. Those given prescriptions for opioids were prescribed an average of 85 pills, which not only puts patients at risk, but also those around them. In 2016, overprescribing of postsurgical opioids resulted in 3.3 billion unused pills flooding into communities, making these drugs available for diversion and misuse.

Middle age women consume the most opioids

Women ages 40-59 are prescribed more opioids than any other age group and receive twice as many opioid prescriptions as their male counterparts. This population is also particularly vulnerable when prescribed opioids after surgery, with about 13% of middle age women becoming newly persistent opioid users who continue to use opioids three to six months after surgery, which puts them at high risk for dependence and addiction. Among women, this age group has been shown to have the highest death rates from opioids.

Surgery is a gateway to persistent opioid use and potential misuse

Nearly 3 million patients undergoing surgeries in 2016 became newly persistent opioid users. Of the seven surgeries studied in this analysis, colectomy (an operation removing a portion of the colon) and knee replacement surgeries put patients most at risk—leading to 17.6 and 16.7% of patients, respectively, becoming persistent opioid users.

Gen X women and knee replacement surgery are a dangerous combination

Among all the surgeries and age groups studied, women ages 35-44 undergoing knee replacement surgery had the highest rate of persistent opioid use following their operation, at 22.8%.

Enough opioids were prescribed in 2016 to provide every American with **36 pills**

In 2016, 11.7 billion opioid pills were prescribed to Americans, enough opioids for every man, woman and child to have 36 pills apiece. The highest rate of opioid prescribing is concentrated in more rural states, primarily in the South. In Alabama, the state with the highest opioid prescribing rates, every resident could have 72 pills each.

Immediate-release opioids are easiest to misuse

Immediate-release (IR) opioids now account for 88% of opioid prescriptions and are the new initial source of opioid dependence and addiction since restrictions on extended-release (ER) opioids have dramatically reduced the prescribing of those formulations. Most IR opioids have no abuse-deterrent properties, making them potentially dangerous and addictive.

The estimated impact a **10% reduction** in surgery-related opioid prescribing could have



332 million fewer unused pills per year that are flowing into communities, substantially reducing the opportunities for prescription opioid diversion and misuse



300,000 fewer people each year becoming persistent opioid users following surgery, significantly reducing the number of patients at high risk of dependence or addiction



\$830 million saved annually in drug costs alone

Methodology

QuintilesIMS Institute conducted this retrospective analysis based on QuintilesIMS National Prescription Audit (NPA)[™], National Sales Perspective (NSP)[™] and QuintilesIMS Xponent[®] to assess prescriptions, sales and drug quantities within therapeutic categories. Data was selected using a proprietary QuintilesIMS coding system, Uniform System Classification (USC) and the Anatomical Therapeutic Classification (ATC) codes. The analysis examined the number and type of prescriptions and quantity of pills prescribed in 2016 by patient age, gender and geography, as well as prescriber specialty and drug costs.

QuintilesIMS Charge Data Master (CDM) was used to analyze specific drugs administered during hospital inpatient and outpatient surgical procedures, including hernia, total knee replacement, colectomy, hysterectomy, total hip replacement, sleeve gastrectomy and rotator cuff surgery. The CDM data set is a sample of 600 private hospitals for all inpatient and outpatient claims, projected nationally and to key regions. The PharMetrics Plus[™] data set containing adjudicated medical and pharmacy claims across the U.S. was employed to study pre-surgical and postsurgical opioid prescribing and captured claims from Jan. 1, 2014 to Dec. 31, 2016 to account for a 12-month pre-surgical and a one year postsurgical period. The CDM analysis included a sample of 2,075 patients ages 0-64 that was projected to over 1.7 million U.S. surgical patients. The PharMetrics Plus analysis included a sample of 78,129 patients ages 18-64 who had surgical procedures in 2016 and were both opioid-naïve prior to surgery and received an opioid during the perioperative surgical procedure.

The seven surgeries selected for the surgical data set represent a sampling of surgeries often used by clinical and health policy researchers. It includes outpatient and inpatient procedures, as well as surgeries that require holistic management for adequate recovery, including rehabilitation and pain management. The sample also includes a variety of soft tissue and orthopedic procedures. The results from the analysis of the seven surgeries have been projected onto the total number of ambulatory and in-patient surgery patients in the United States.

For the PharMetrics Plus analysis, to determine opioid-naïve patients and newly persistent users of opioids, the analysis followed the methodology established in a study conducted by Brummett et al. and published in the April 12, 2017 volume of the *Journal of the American Medical Association* (JAMA). Opioid-naïve patients were defined as patients who had no opioid prescriptions in the pre-surgical period, which was defined as 366 days to 30 days prior to the surgery date. The perioperative surgical period, during which opioid exposure occurred, was defined as 30 days prior to the surgery date to 14 days post-discharge. Patients were then tracked from 15 days post-discharge through 366 days. Patients receiving a prescription for an opioid 90 to 180 days post-discharge were considered newly persistent opioid users. Patients were categorized based on a grouping of analgesic products and analyzed by gender, age and the number of patients receiving prescriptions for opioids in the postsurgical period.

Opioid Use and Misuse in America

If you look at the amount of money we're spending on this opioid epidemic and the treatments that are involved, much less the deaths of our loved ones and the socioeconomic costs to society, it's a tremendous amount of cost on the back end of the problem. So what we need to do is start spending money on the front end to prevent the wave of entry into the opioid crisis.

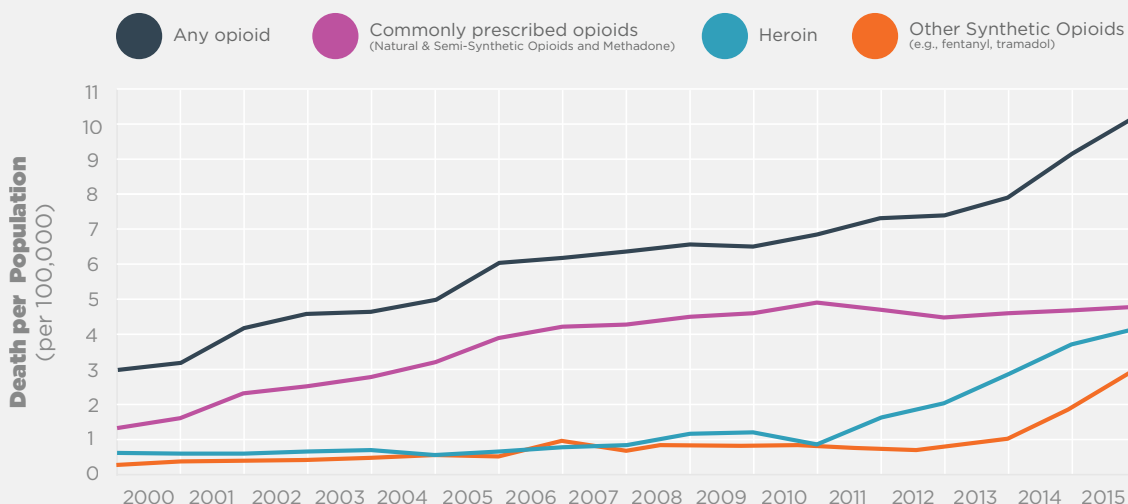
— Scott Sigman, M.D.

Pain is a serious and debilitating condition that can severely impact all aspects of a person's life. Effectively treating pain is a medical necessity. However, the standard treatment for pain, which relies heavily on the use of opioid medications, has created an epidemic of addiction, death and devastation all across America.*

The statistics are dismal and all too familiar: deaths from opioid overdoses have been on the rise since 2000.ⁱ Over 33,000 Americans died of an opioid overdose in 2015, up 16% from the year before.ⁱⁱ According to President Trump's commission on the opioid crisis, the number of people dying from opioids every three weeks is equivalent to the death toll from the 9/11 terrorist attacks. While this number includes deaths from both legal opioid medications and heroin, the overwhelming initial source of addiction are prescription opioids—with 83% of heroin users starting out by abusing prescription painkillers.ⁱⁱⁱ In fact, Americans, who make up less than 5% of the world's population, consume almost all of the world's supply of prescription opioids, accounting for over 99% of hydrocodone and nearly three-quarters of the oxycodone sales in 2016.^{iv}

With increased attention, policies and regulations addressing the nation's opioid problem, the prescribing of opioids has been on the decline in recent years.** But despite these reductions, the amount of opioids prescribed to patients in 2015, as measured by morphine milligram equivalents, was still three times higher than it had been in 1999, according to the most recent Centers for Disease Control and Prevention (CDC) report.^v It's also become clear that, as restrictions have tightened around the use of prescription opioids, people are increasingly turning to heroin and illegal fentanyl. A 2016 study estimated that the yearly cost of opioid overdose, abuse and dependence in the U.S. is \$78.5 billion.^{vi}

Overdose Deaths Involving Opioids, United States, 2000-2015



*See appendix (pg. 17) for Rise of Opioid Abuse in the U.S.

**See appendix (pgs. 18-19) for Summary of National Regulatory & Policy Actions

Snapshot of Opioid Prescribing Across the Nation

While there was nearly a 6% decline in the number of opioids prescribed from 2015 to 2016, these medications are still among the most widely used prescription drugs in the U.S.

According to the QuintilesIMS analysis, 11.7 billion opioid pills were prescribed to Americans in 2016, enough for every man, woman and child to have 36 pills each.

Primary care physicians are the doctors most often writing those prescriptions, on average prescribing 13,000 opioid pills per year.

The analysis also found that, by reducing the number of opioid prescriptions filled at retail pharmacies by as little as 10%, the U.S. could save \$830 million dollars each year in drug costs alone.

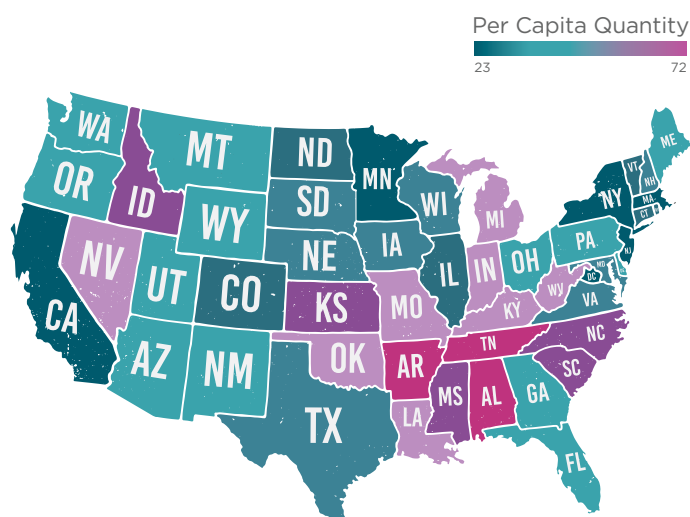
Geographic Trends

A state-by-state look at opioid prescribing reveals wide variations in the prescribing of these drugs. The highest number of per capita opioid prescriptions is concentrated in more rural states, primarily in the South. **The top three states—Alabama, Tennessee and Arkansas—had enough opioids prescribed last year for every resident to have ~70 pills each.** The state with the lowest number of opioids per capita was Hawaii, with the equivalent of 26 pills per person.*

Rural areas have been hit the hardest by the opioid epidemic for a myriad of socio-economic and medical reasons, including high unemployment, economic strife, poor health and high rates of uninsured.^{vii}

Additionally, because of limited access to medical facilities in rural regions, physicians may provide larger quantity prescriptions to patients during medical visits, which can lead to higher numbers of unused pills and thus a greater availability for non-medical use and diversion.^{vii}

State-Level Opioid Dispensed Quantity Per Capita (2016)



*See appendix (pg. 16) for state-by-state per capita opioid pill consumption chart

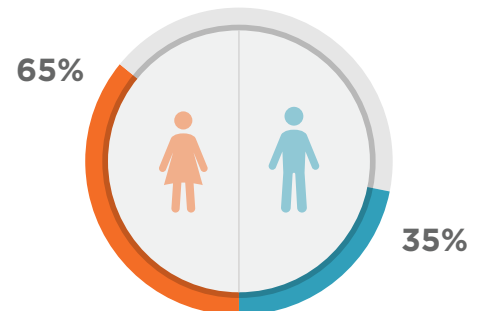
Age and Gender Trends Reveal High Rates of Prescribing in Particularly Vulnerable Populations

The data show alarming trends related to high rates of opioid prescribing to the specific populations that are most at risk for dependence and addiction, including middle age women and young adults.

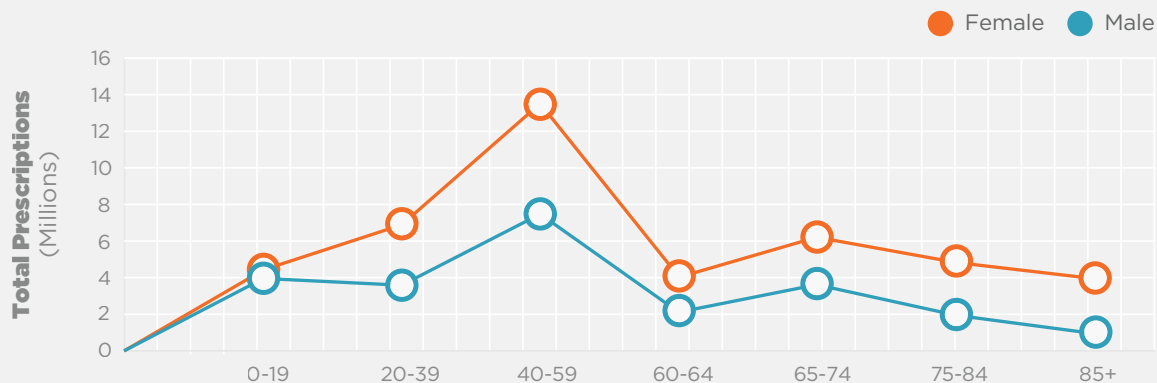
Women far outpace men in their use of opioids. **In 2016, 30% more opioid prescriptions were written for women than for men.**

The disparity between women and men may be due to the higher prevalence of chronic disease and pain conditions among women that are often treated with opioids.

Share of Opioid Prescriptions by Gender, 2016



Women 40-59 years old received the greatest number of opioid prescriptions overall, almost twice as many as their male counterparts. This age group also includes the female demographic (ages 45-54) most at risk of dying from an overdose of prescription opioids.^x



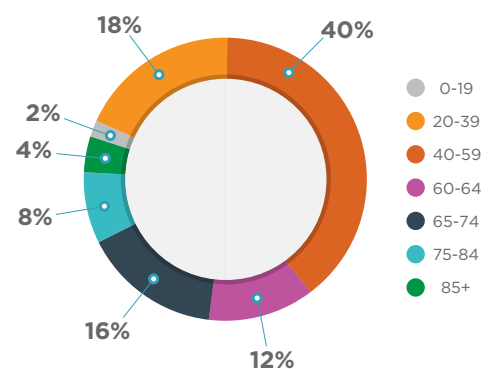
Nearly one in five opioid prescriptions (18%) went to patients in another vulnerable population, those aged 20-39; this is the population most likely to misuse these drugs and the one that accounts for the greatest number of individuals entering treatment for opioid addiction.^x

While use of opioids among children is far less common, **10-19 year olds who are prescribed opioids receive, on average, a 60-day supply.** There were also enough opioid prescriptions written for that age group in 2016 for every one out of five children to have their own prescription.

Seniors 65 and older received a large percentage of overall opioid prescriptions, which is not surprising given the higher rates of cancer and other chronic diseases affecting this age group.

However, the elderly are especially vulnerable to side effects from these drugs and are also prone to dependence and addiction, with hospitalizations of geriatric patients for opioid overuse increasing five-fold in the past 20 years, according to a 2014 government report.^{xi}

Share of Opioid Prescriptions by Age, 2016



The Role of Opioids in Treating Postsurgical Pain

Utilization of modern-day multimodal anesthesia can significantly alter postsurgical pain and enhance the patient's surgery experience. This is a critical part of providing our patients the best care.

— **Paul Sethi, M.D.**

Even if a patient says to their doctor before surgery, 'I've got an opioid addiction problem. I really want to be careful,' they still get prescribed the opioid. Nobody really changes their prescribing pattern. They just continue to do it the way they've always done it, even if the patient is at high-risk.

— **Peggy Compton, Ph.D., RN**

In an effort to address the opioid epidemic, much attention has been focused on reducing the widespread use of opioids to treat chronic pain patients. While there is no question that population is most prone to dependence and addiction, not enough scrutiny has been given to another significant population at risk of long-term consequences related to opioid overexposure—patients who have just undergone surgery.

Surgery plays a dual role in the opioid problem. It can be the initial introduction to opioids for many patients. It also can lead to a chronic pain condition that then requires further opioid treatment if the acute postsurgical pain is not properly controlled. It's therefore important to prevent or effectively treat postsurgical pain using the least amount of opioids possible.

Despite the availability of several effective non-opioid options, opioids have long been the gold standard for treating postsurgical pain and each year 56 million patients receive opioid medications following surgery. However, little guidance has been available to health care providers regarding the proper dose and duration of opioids to treat postsurgical pain. The result has been a great deal of opioid overprescribing, which in turn is putting patients at risk for persistent use, dependence or addiction, and thus making the operating room an unintentional gateway to the overall opioid epidemic.^{xii}

Various medical organizations have recently issued guidelines encouraging the use of multimodal pain management after surgery, which utilizes a combination of non-opioid medications, such as NSAIDs, acetaminophen and local anesthetics including long-acting formulations, as well as non-drug approaches, to reduce or eliminate the need for opioids during and after surgery, resulting in improved patient outcomes.^{xiii-xviii} Increasingly, leading medical societies have focused on advocating for the use of opioids only when necessary and in the lowest effective doses.

However, as the following QuintilesIMS findings show, there continues to be widespread use of opioids in the treatment of postsurgical pain, a practice that puts a substantial number of Americans at risk of drug dependence and addiction.

Prevalence and Overprescribing of Opioids in Surgeries

Despite the regulatory, policy and health efforts to curb opioid use, the QuintilesIMS research finds that **nine in 10 patients who have a surgical procedure still receive opioids** as part of a multimodal strategy or as a single-drug treatment for postsurgical pain. **Patients given prescriptions for opioids during the perioperative period were prescribed an average of 85 pills.** Particularly concerning is the level of opioid overprescribing that results, accounting for large quantities of excess opioids pouring into communities and available for diversion and misuse.

The research shows that **3.3 billion pills per year are left unused by patients who've undergone surgical procedures.** A vast majority of unused prescription opioids are unsafely stored in medicine cabinets and are a well-known source of drug diversion, with 55% of people who misuse opioids obtaining them from family or friends who have excess pills.^{xix, xx}

Reducing surgery-related opioid prescribing by just 10% would mean almost 332 million fewer unused pills available each year for potential diversion and misuse.



Risk of Persistent Use, Dependence and Addiction

Exposing surgery patients to opioids unnecessarily puts them at risk for potentially debilitating side effects, such as nausea, dizziness, constipation and over-sedation, as well as at risk of persistent use, dependence or addiction.

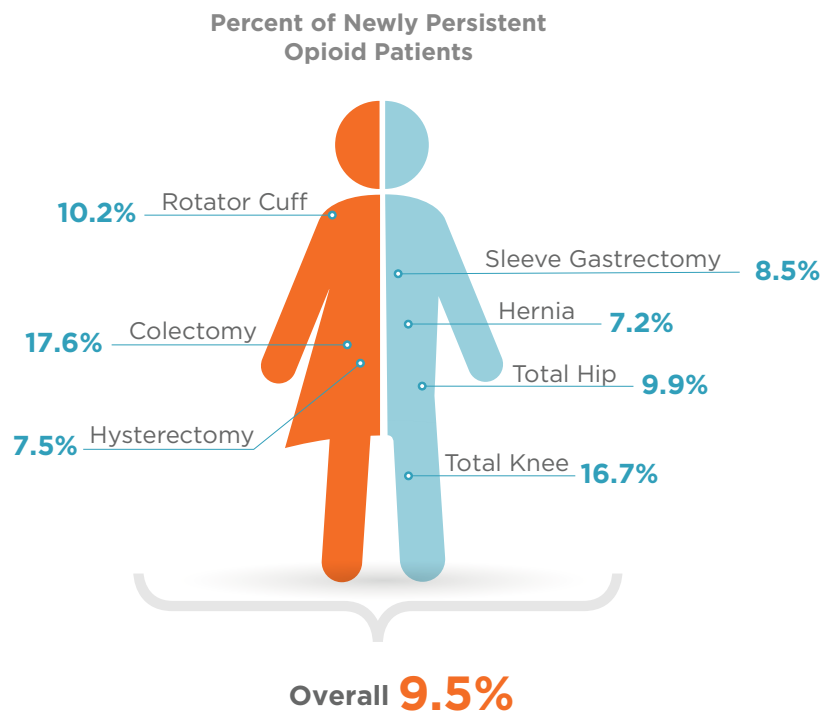
This analysis examined opioid use in patients undergoing seven different surgeries and found that nearly **one in 10 patients (9.5%) who had not been taking opioids prior to surgery became persistent opioid users who continued taking these drugs three to six months after the procedure; that number climbed to nearly 18% for patients undergoing certain operations.**

Applying these findings to all opioid-naïve surgery patients, **approximately 3 million Americans will become newly persistent users of opioids each year due to initial exposure following surgery.**

“Decreasing the amount of pills out in the world is a good thing. When you prescribe 60 and they only take three, the extras are sitting in the medicine cabinet and that’s where the trouble happens. There are too many opioids floating around in the community, and we should be doing all we can to decrease those numbers.”

— Peggy Compton,
Ph.D., RN

Those at highest risk of continued opioid use are patients who will have a colectomy, an operation that involves removing a portion of the colon (17.6%), followed by those who will undergo total knee replacement (16.7%), rotator cuff (10.2%) and total hip replacement (9.9%) surgeries. While hernia patients are at the lowest risk (7.2%) among the surgeries studied, because it's a commonly performed procedure, they make up a substantial portion of those who will go on to become persistent opioid users and therefore should be considered a high-risk pool.



“The bottom line is that we don't have a predictive test to analyze and figure out who's going to be that one patient out of 10 who will become addicted. You have to assume that every single person you care for is potentially addicted and therefore try to minimize the exposure to opioids in the perioperative setting.”

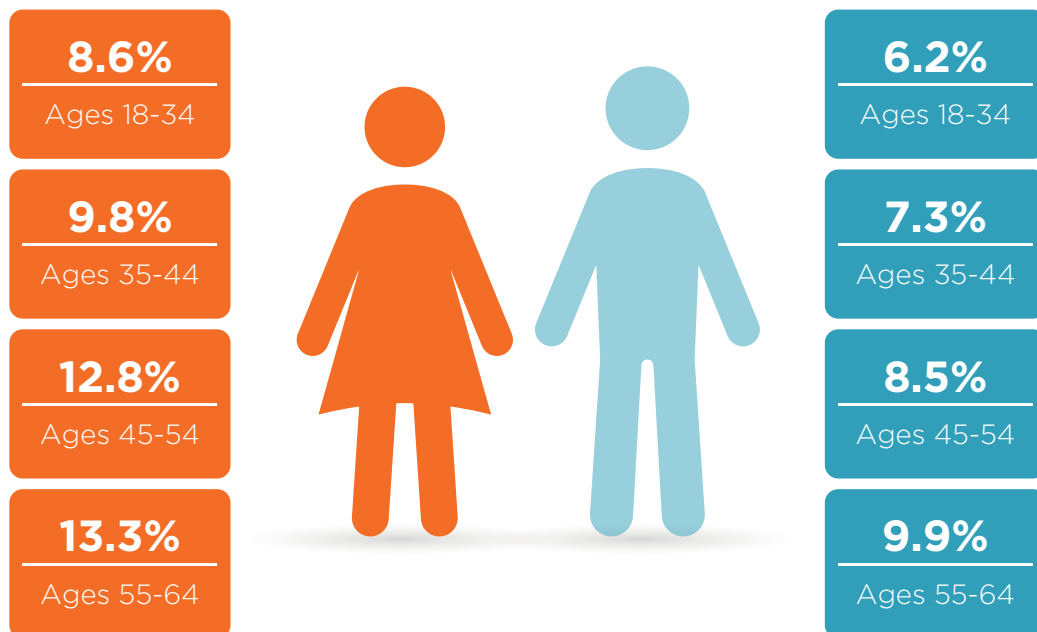
— **Scott Sigman, M.D.**

Gender Differences in Opioid Persistence Following Surgery

The analysis shows that, while men and women on average are prescribed similar amounts of opioids to treat postsurgical pain, more women than men become newly persistent users of these drugs. Women's higher propensity for opioid dependence may be due to differences in body fat, metabolism and hormones.^{xxi}

Forty percent more women than men become persistent users of opioids when looking at those surgeries performed on both females and males, which include six of the seven procedures examined in the analysis. **The differences in women and men are most pronounced among newly persistent opioid users ages 45-54 (12.8% vs. 8.5%).**

Persistent Opioid Use by Age and Gender

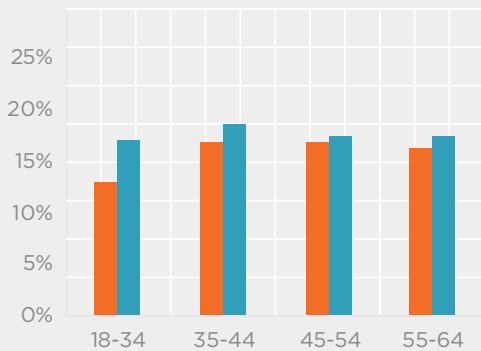


Among all the surgeries and age groups studied, women 35-44 years old who had knee replacement surgery had the highest rate of persistent opioid use at 22.8%.

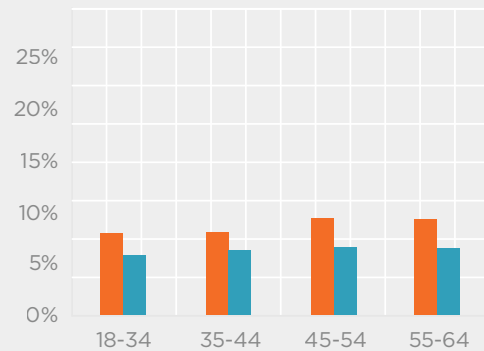


Female Male

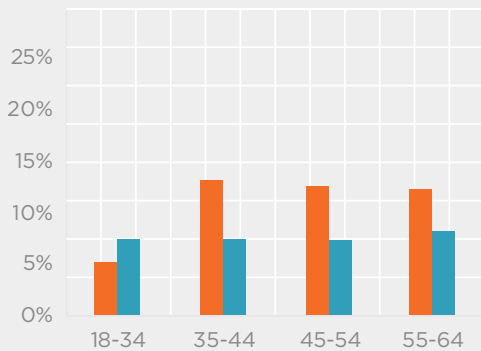
Colectomy



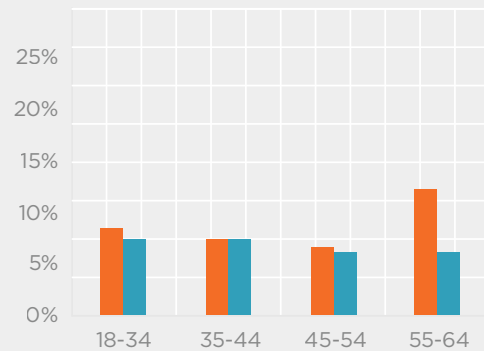
Hernia



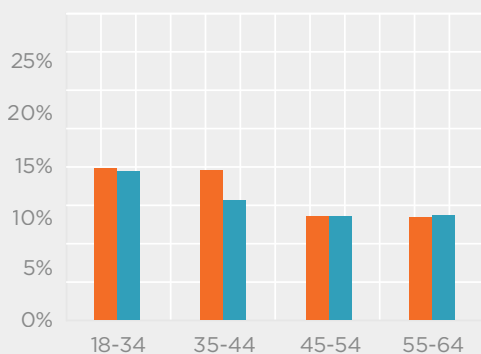
Rotator Cuff



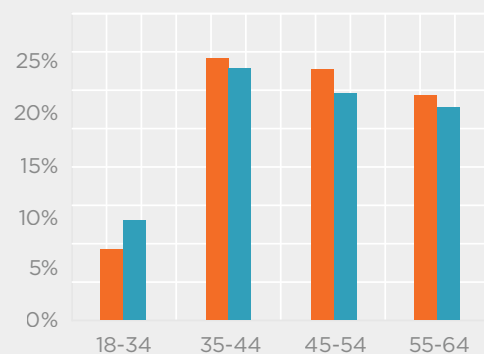
Gastrectomy



Total Hip



Total Knee

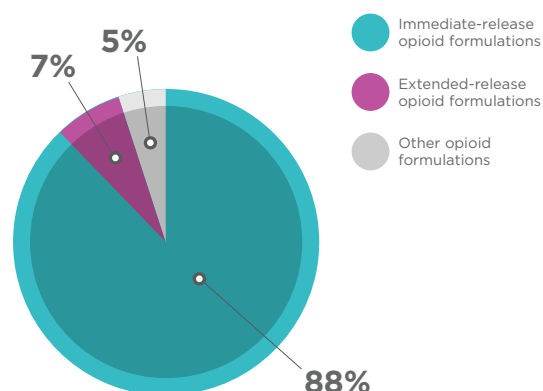


The Rise of Immediate-Release Opioids

Opioids are usually prescribed to patients as either extended-release (ER) or immediate-release (IR) formulations. ER opioids contain higher doses of the drug in order to provide pain relief for longer durations of time. Efforts to prevent the misuse of prescription opioids have, until very recently, focused solely on regulating and reformulating ER opioids to include abuse-deterrent properties, since their high opioid content is preferred by drug abusers. In 2012, the FDA approved a Risk Evaluation and Mitigation Strategy (REMS) to manage serious risks associated with ER opioids, requiring companies marketing these products to make training available for prescribers on proper use and to educate patients about the risks.

While efforts to restrict ER opioids have been successful, the result has been that IR formulations—the majority of which include no abuse-deterrent properties—are being prescribed in their place. **The QuintilesIMS research found that 88% of all opioids prescribed in 2016 were IR versions of the drug. Since IR opioids are overwhelmingly the first exposure patients currently have to opioids, and with minimal safeguards in place to prevent misuse of these drugs, they are now the most frequent cause of opioid dependence and addiction.** And despite the FDA's recent announcement on plans to increase safety warnings and extend REMS to cover IR opioids, there is still far more attention given to restricting ER formulations. There are currently nine FDA-approved, abuse-deterrent forms of ER opioids, while the only abuse-deterrent IR formulation was approved in April 2017.

Share of Opioid Prescriptions by Formulation, 2016



Extended-Release and Immediate-Release Opioids

Extended-Release Opioids	Immediate-Release Opioids
Buprenorphine patch (Butrans)	Codeine (generics)
Fentanyl patch (Duragesic)	Fentanyl - transmucosal (Abstal, Actiq, Fentora, Lazanda, Onsolis, Sybsys)
Hydrocodone (Zohydro ER)	Hydrocodone + acetaminophen (generics, Norco, Vicodin, Xodol)
Hydromorphone ER (generics, Exalgo)	Hydromorphone (generics, Dilaudid)
Methadone (generics, Dolophine, Methadose)	Levorphanol (generics)
Morphine ER (generics, Avinza, Kadian, MS Contin)	Meperidine (generics, Demerol, Meperitab)
Oxycodone (Oxycontin)	Morphine (generics)
Oxymorphone ER (generics, Opana ER)	Oxycodone (generics, Roxicodone)
Tapentadol (Nucynta ER)	Oxymorphone (generics, Opana)
Tramadol ER (generics, ConZip, Ultram ER)	Tapentadol (Nucynta)
	Tramadol (generics, Ultram)

Looking Ahead: The Impact of Reducing Opioid Prescribing

Opioid addiction is a complex problem that requires solutions on many fronts. What is very clear, however, is that the liberal prescribing of opioids for the treatment of pain continues to be a primary source of the nation's opioid epidemic. Policy, regulatory and law enforcement actions on the federal and state level, as well as changes in medical guidelines, and prescriber and patient education efforts are beginning to have an effect as seen in the decline in opioid prescribing in recent years. But, as this report reveals, an extraordinary number of opioids are still being prescribed and used by patients or left unused and potentially misused by others.

While efforts to help those who have become addicted to opioids is critically important, preventing addiction in the first place is crucial to ending this epidemic. The bottom line is that the utilization of opioids must be dramatically reduced. Some efforts currently being implemented are showing some success but require far wider adoption. They include: limiting opioid prescriptions to the minimum day's supply needed, utilizing non-opioid pain treatments for chronic pain patients where opioids risks often outweigh the minimal analgesic effect provided and reducing or eliminating the use of opioids in the surgical setting by using multimodal approaches that have been proven to effectively treat postsurgical pain.^{xxii, xxiii}

The estimated impact a **10% reduction** in surgery-related opioid prescribing could have



332 million fewer unused pills per year that are flowing into communities, substantially reducing the opportunities for prescription opioid diversion and misuse



300,000 fewer people each year becoming persistent opioid users following surgery, significantly reducing the number of patients at high risk of dependence or addiction



\$830 million saved annually in drug costs alone

“As the No. 3 opioid prescribers, and a potential source of diverted medications, orthopedic surgeons must take some responsibility for the opioid epidemic in our country. Altering our prescribing habits, having more candid conversations with our patients, and performing opioid sparing or even opioid avoidance surgery is a critical part of patient care.”

— **Paul Sethi, M.D.**

“The only way to tackle the opioid problem is at its root. What we really need to do is to send patients home without an opioid prescription. That way, they don't get exposed to opioids at home. They won't have access to them; their family won't have access to them. They won't be available for diversion; they won't be available for misuse. That's really the only real solution to this problem.”

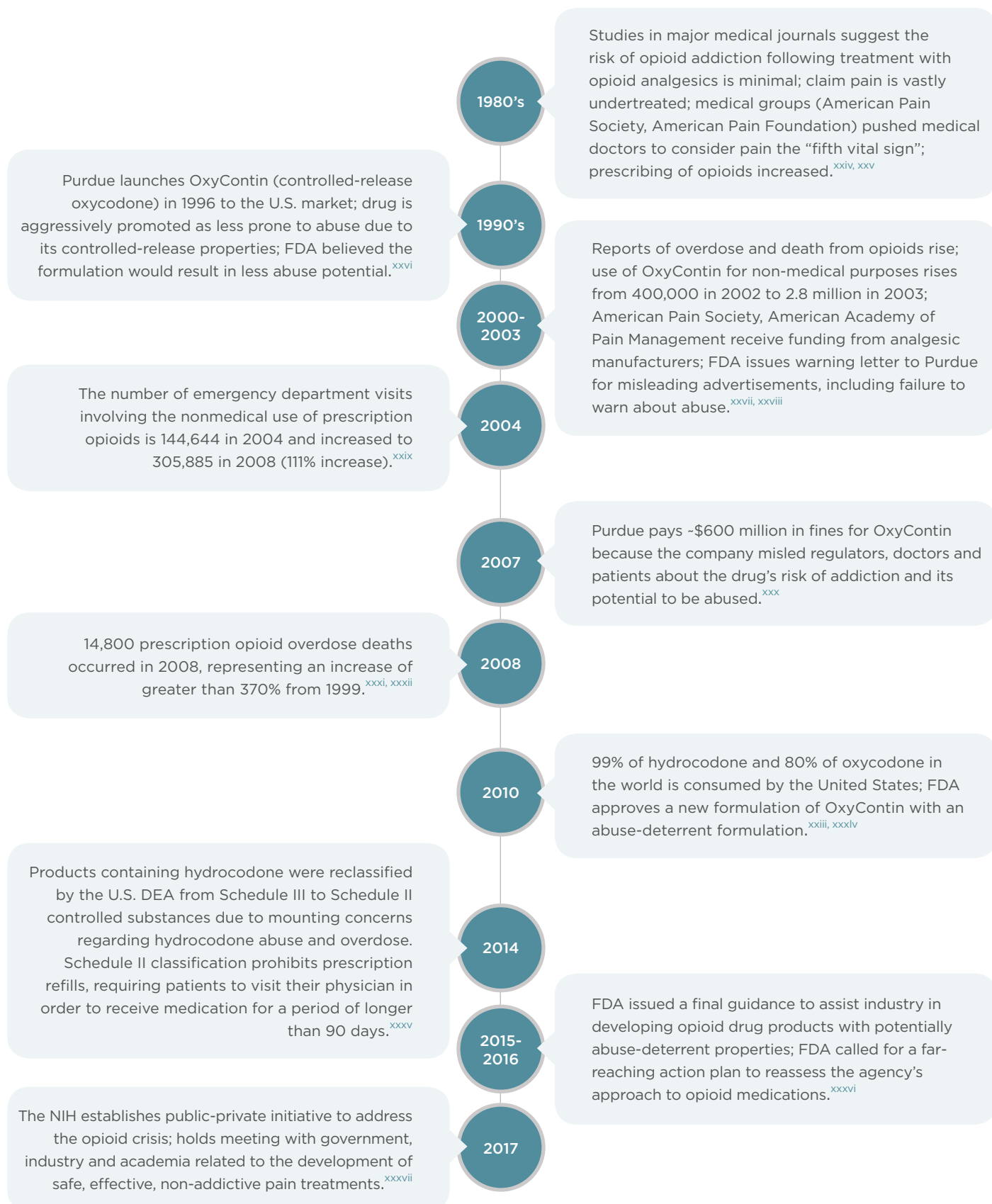
— **Gabriel Eduardo Mena, M.D.**

Appendix

State	Pills per capita
Alabama	72
Tennessee	70
Arkansas	68
Oklahoma	65
Kentucky	63
West Virginia	62
Michigan	60
Nevada	59
Indiana	58
Missouri	57
Louisiana	57
South Carolina	56
Mississippi	55
Idaho	54
North Carolina	54
Kansas	54
Delaware	49
Oregon	49
Ohio	48
Arizona	47
Maine	46
Georgia	46
Montana	46
Pennsylvania	46
Utah	46
Wyoming	42
Florida	42
Washington	42
New Mexico	41
Wisconsin	40

State	Pills per capita
Iowa	40
Nebraska	39
South Dakota	39
Virginia	37
Alaska	37
New Hampshire	37
Texas	37
Maryland	37
Illinois	36
Vermont	36
Colorado	36
Rhode Island	33
Connecticut	32
North Dakota	31
New Jersey	30
California	30
New York	30
Massachusetts	29
Minnesota	28
Hawaii	26
District of Columbia	23

Rise of Opioid Abuse in the United States



Summary of National Regulatory & Policy Actions

1

2011: Obama Administration releases the first comprehensive prescription drug abuse plan of National Regulatory & Policy Actions

- a National Drug Abuse Prevention Plan was initiated in 2010 by the Obama Administration and was updated each year through 2016. In 2011, the Obama Administration announced the beginning of the Prescription Drug Abuse Prevention Plan, which calls for collaboration among the Office of National Drug Control Policy, the DEA and the FDA on prescription drug abuse.^{xxviii, xxxix}

2

FDA initiates REM program for opioids and required safety labeling and post-marketing studies

- a In 2012, the FDA approved a Risk Evaluation and Mitigation Strategy (REMS), a strategy to manage known or potential serious risks associated with a medication, for long-acting opioids. The REMS required companies marketing long-acting opioid analgesic products to make available training for health care professionals who prescribe them on proper prescribing practices and to distribute educational materials to prescribers and patients on the safe use of these medications.^{xi}
- b In 2013, the FDA implemented safety labeling and post-marketing study requirements for long-acting opioids. This policy was amended in 2014, 2016 and 2017.^{xli}

3

2014: The DEA and the HHS rescheduled hydrocodone combination products from schedule III to schedule II

- a This included a reduction in opioid production quotas by the DEA.^{xlii}

4

2016: Surgeon General's "Turn The Tide Rx Campaign" and the Surgeon General's "Facing Addiction in America: The Surgeon General's Report on Alcohol, Drugs, and Health" launch

- a In 2016, the Surgeon General office launched two educational campaigns around substance misuse and opioid misuse and addiction.^{xliii, xlv}

5

2016: FDA Opioids Action Plan

- a According to the FDA, "the plan will focus on policies aimed at reversing the epidemic, while still providing patients in pain access to effective relief."^{xlv, xlv} The initiative seeks to, among other things:
 - i Convene an expert advisory committee before approving any new drug application for an opioid w/o abuse-deterrent properties
 - ii Develop changes to IR opioid labeling, including additional warnings and safety information that incorporate elements similar to the long-acting opioid analgesics
 - iii Improve access to naloxone and medication-assisted treatment options for patients with opioid use disorders

6

21st Century Cures Act

- a Includes \$1 billion in funding for state and territory grants for opioid prevention and treatment programs to be delivered in 2017 and 2018.^{xlvii}
- b Massachusetts is the first state to receive a grant from the bill.
- c California is the state receiving the greatest amount (\$44.7 million) in 2017.
- d A table documenting the funding amounts per state and territory for 2017 is available at [HHS.gov](https://www.hhs.gov).

7

President Trump's FY 2018 budget includes additional funding for the opioid crisis

- a The funding budget includes request for funding for treatment and prevention efforts as well as law enforcement and border security related to drug trafficking.^{xlviii}

8

On Aug. 10, 2017, President Trump announces he plans to declare the opioid epidemic a national emergency

9

The DEA announces additional volume restrictions on opioid manufacturing, to go into practice in 2017

- a Most opioids will be reduced by 25% or more with hydrocodone at 66% reduction.^{xlix}

About the Commentators

Peggy Compton, PH.D., RN, FAAN

van Ameringen Chair in Psychiatric and Mental Health Nursing at University of Pennsylvania

Gabe Mena, M.D.

Associate Professor, Department of Anesthesiology and Perioperative Medicine at MD Anderson

Paul Sethi, M.D.

Orthopaedic Surgeon at Orthopaedic & Neurosurgery Specialists (ONS) and President of the ONS Foundation for Clinical Research and Education

Scott Sigman, M.D.

Orthopaedic Surgeon and Team Physician at University of Massachusetts

References

- ⁱ Centers for Disease Control and Prevention, “Opioid Overdose: Data Overview,” 16 December 2016. [Online]. Available: <https://www.cdc.gov/drugoverdose/data/index.html>. [Accessed 22 May 2017].
- ⁱⁱ R. A. Rudd, P. Seth, M. S. David and L. Scholl, “Increases in Drug and Opioid-Involved Overdose Deaths — United States, 2010–2015,” *CDC: Morbidity and Mortality Weekly Report*, vol. 65, no. 50-51, pp. 1445-1452, 2016.
- ⁱⁱⁱ C. M. Jones, “Heroin use and heroin use risk behaviors among nonmedical users of prescription opioid pain relievers - United States, 2002-2004 and 2008-2010,” *Drug Alcohol Depend*, vol. 132, no. 1-2, pp. 95-100, 2013.
- ^{iv} IMS data
- ^v CDC Report at: <https://www.cdc.gov/vitalsigns/opioids/index.html> (Accessed July 26, 2017)
- ^{vi} C. S. Florence, C. Zhou, F. Luo and L. Xu, “The Economic Burden of Prescription Opioid Overdose, Abuse, and Dependence in the United States, 2013,” *Med Care*, vol. 54, no. 10, pp. 901-906, 2016.
- ^{vii} National Advisory Committee on Rural Health and Human Services, “Families in Crisis: The Human Service Implications of Rural Opioid Misuse,” July 2016. [Online]. Available: <https://www.hrsa.gov/advisorycommittees/rural/publications/opioidabuse.pdf>. [Accessed 24 May 2017].
- ^{viii} M. Keyes, M. Cerdá, J. E. Brady and S. Galea, “Understanding the rural-urban differences in nonmedical prescription opioid use and abuse in the United States,” *Am J Public Health*, vol. 104, no. 2, pp. e52-e599, 2014.
- ^{ix} <http://www.webmd.com/mental-health/addiction/news/20170607/opioid-addiction-women>, accessed July 31, 2017
- ^x https://www.samhsa.gov/data/sites/default/files/2003_2013_TEDS_National/2003_2013_Treatment_Episode_Data_Set_National.pdf
- ^{xi} <https://www.hcup-us.ahrq.gov/reports/statbriefs/sb177-Hospitalizations-for-Opioid-Overuse.jsp> accessed on August 7, 2017
- ^{xii} MV Hill, ML McMahon, RS Stucke, RJB Barth, Jr, Wide Variation and Excessive Dosage of Opioid Prescriptions for Common General Surgical Procedures, *Annals of Surgery*, Vol 265, No 4, April 2017, pp. 709-714
- ^{xiii} A. Prabhaker, J. N. Cefalu, J. S. Rowe, A. D. Kaye and R. D. Urman, “Techniques to Optimize Multimodal Analgesia in Ambulatory Surgery,” *Curr Pain Headache Rep*, vol. 21, no. 5, 2017.
- ^{xiv} N. Vadivelu, S. Mitra, A. M. Kai, G. Kodumudi and K. Gritsenko, “Review of perioperative pain management of opioid-dependent patients,” *J Opioid Manag*, vol. 12, no. 4, pp. 289-301, 2016.
- ^{xv} M. V. Rana, R. Desai, L. Tran and D. Davis, “Perioperative Pain Control in the Ambulatory Setting,” *Curr Pain Headache Rep*, vol. 20, no. 3, 2016.
- ^{xvi} R. Chou, D. B. Gordon, O. A. de Leon-Casasola, J. M. Rosenberg, S. Bickler, T. Brennan and et. al, “Guidelines on the Management of Postoperative Pain,” *The Journal of Pain*, vol. 17, no. 2, pp. 131-157, 2016.
- ^{xvii} E. M. Helander, B. L. Menard, C. M. Harmon, B. K. Homra, A. V. Allain, G. L. Bordelon and et al, “Multimodal Analgesia, Current Concepts, and Acute Pain Considerations,” *Curr Pain Headache Rep*, vol. 21, no. 1, 2017.
- ^{xviii} A. Buvaendran and J. S. Kroin, “Multimodal analgesia for controlling acute postoperative pain,” *Curr Opin Anaesthesiol*, vol. 22, no. 5, pp. 588-593, 2009.
- ^{xix} Manchikanti L, Standiford H, Fellows B, et al. Opioid Epidemic in the United States. *Pain Physician*. 2012;15:ES9-ES38.
- ^{xx} Maxwell JS. The prescription drug epidemic in the United States: a perfect storm. *Drug Alcohol Rev*. 2011;30:264-270

References

- ^{xxi} <http://www.webmd.com/mental-health/addiction/news/20170607/opioid-addiction-women> accessed on August 7, 2017
- ^{xxii} W. M. Hooten, R. Timming, M. Belgrade, J. Gaul, M. Goertz, B. Haake, C. Myers, M. P. Noonan, J. Owens, L. Saeger, K. Schweim, G. Shteyman and N. Walker, "Assessment and Management of Chronic Pain," Institute for Clinical Systems Improvement, 2013.
- ^{xxiii} G. M. Franklin, "Opioids for chronic noncancer pain: a position paper of the American Academy of Neurology," *Neurology*, vol. 83, no. 14, pp. 1277-1284, 2014.
- ^{xxiv} A. Shah, C. J. Hayes and B. C. Martin, "Characteristics of Initial Prescription Episodes and Likelihood of Long-Term Opioid Use — United States, 2006–2015," *MMWR Morb Mortal Wkly Rep*, vol. 66, no. 10, pp. 265–269, 2017.
- ^{xxv} M. L. Barnett, A. R. Olenski and A. B. Jena, "Opioid-Prescribing Patterns of Emergency Physicians and Risk of Long-Term Use," *N Engl J Med*, vol. 376, no. 7, pp. 663–673, 2017.
- ^{xxvi} J. Porter and H. Jick, "Addiction rare in patients treated with narcotics," *N Engl J Med*, vol. 302, no. 2, p. 123, 1980.
- ^{xxvii} J. Porter and H. Jick, "Addiction rare in patients treated with narcotics," *N Engl J Med*, vol. 302, no. 2, p. 123, 1980.
- ^{xxviii} R. K. Portenoy and K. M. Foley, "Chronic use of opioid analgesics in non-malignant pain: report of 38 cases," *Pain*, vol. 25, no. 2, pp. 171–186, 1986.
- ^{xxix} U.S. Food & Drug Administration, "Timeline of Selected FDA Activities and Significant Events Addressing Opioid Misuse and Abuse," 24 April 2017. [Online]. Available: <https://www.fda.gov/Drugs/DrugSafety/InformationbyDrugClass/ucm338566.htm>. [Accessed 18 May 2017].
- ^{xxx} United States General Accounting Office, "Prescription drugs: OxyContin Abuse and Diversion and Efforts to Address the Problem," December 2003. [Online]. Available: <http://www.gao.gov/new.items/d04110.pdf>.
- ^{xxxi} CDC, "Morbidity and Mortality Weekly Report," Vital Signs: Overdoses of Prescription Opioid Pain Relievers – United States, 1999–2008, 4 November 2011. [Online]. Available: <https://www.cdc.gov/mmwr/preview/mmwrhtml/mm6043a4.htm>.
- ^{xxxi} M. Warner, L. H. Chen and D. M. Makuc, "Increase in fatal poisonings involving opioid analgesics in the United States, 1999–2006," *NCHS Data Brief*, vol. Sep, no. 22, pp. 1–8, 2009.
- ^{xxxi} E. K. Choo, C. Douriez and T. Green, "Gender and Prescription Opioid Misuse in the Emergency Department," *Acad Emerg Med*, vol. 21, no. 12, pp. 1493–1498, 2014.
- ^{xxxi} J. Porter and H. Jick, "Addiction rare in patients treated with narcotics," *N Engl J Med*, vol. 302, no. 2, p. 123, 1980.
- ^{xxxi} A. Frakt, "TheUpshot: Painkiller Abuse, a Cyclical Challenge," *The New York Times*, 22 December 2014. [Online]. Available: https://www.nytimes.com/2014/12/23/upshot/painkiller-abuse-a-cyclical-challenge.html?_r=0.
- ^{xxxi} J. Porter and H. Jick, "Addiction rare in patients treated with narcotics," *N Engl J Med*, vol. 302, no. 2, p. 123, 1980.
- ^{xxxi} National Institutes of Health, "Public-Private Initiative to Address the Opioid Crisis," 26 June 2017. [Online]. Available: <https://www.nih.gov/opioid-crisis>. [Accessed 29 June 2017].

References

- ^{xxxviii} Federation of State Medical Boards, “Guidelines for the Chronic Use of Opioid Analgesics,” April 2017. [Online]. Available: https://www.fsmb.org/Media/Default/PDF/Advocacy/Opioid%20Guidelines%20As%20Adopted%20April%202017_FINAL.pdf. [Accessed 2017 14 June].
- ^{xxxix} The White House President Barack Obama, “National Drug Control Strategy,” Office of National Drug Control Policy, [Online]. Available: <https://obamawhitehouse.archives.gov/ondcp/policy-and-research/ndcs>. [Accessed 12 June 2017].
- ^{xl} The American Academy of Pain Medicine, “White House Announces the First National Drug Abuse Prevention Plan,” [Online]. Available: <http://www.painmed.org/PatientCenter/PreventDrugAbuse/prescription-drug-abuse-prevention-plan/>. [Accessed 12 June 2017].
- ^{xli} U.S. Food & Drug Administration, “Questions and Answers: FDA approves a Risk Evaluation and Mitigation Strategy (REMS) for Extended-Release and Long-Acting (ER/LA) Opioid Analgesics,” 1 March 2013. [Online]. Available: <https://www.fda.gov/drugs/drugsafety/informationbydrugclass/ucm309742.htm>. [Accessed 12 June 2017].
- ^{xlii} A. Frakt, “TheUpshot: Painkiller Abuse, a Cyclical Challenge,” The New York Times, 22 December 2014. [Online]. Available: https://www.nytimes.com/2014/12/23/upshot/painkiller-abuse-a-cyclical-challenge.html?_r=0.
- ^{xliii} U.S. Food & Drug Administration, “New Safety Measures Announced for Extended-release and Long-acting Opioids,” 17 May 2017. [Online]. Available: <https://www.fda.gov/Drugs/DrugSafety/InformationbyDrugClass/ucm363722.htm>. [Accessed 12 June 2017].
- ^{xliv} Surgeon General of the United States, “Turn the Tide Rx: The Surgeon General’s Call to End the Opioid Crisis,” [Online]. Available: <http://turnthetidex.org/>. [Accessed 12 June 2017].
- ^{xlv} Surgeon General of the United States, “Facing addiction in America: the Surgeon General’s report on alcohol, drugs, and health,” [Online]. Available: <https://addiction.surgeongeneral.gov/>. [Accessed 12 June 2017].
- ^{xlvi} U.S. Food & Drug Administration, “Califf, FDA top officials call for sweeping review of agency opioids policies,” 4 February 2016. [Online]. Available: <https://www.fda.gov/NewsEvents/Newsroom/PressAnnouncements/ucm484765.htm>. [Accessed 12 June 2017].
- ^{xlvii} U.S. Food & Drug Administration, “Fact Sheet – FDA Opioids Action Plan,” 13 September 2016. [Online]. Available: <https://www.fda.gov/NewsEvents/Newsroom/FactSheets/ucm484714.htm>. [Accessed 12 June 2017].
- ^{xlviii} CADCA, “The Comprehensive Addiction and Recovery Act (CARA),” [Online]. Available: <http://www.cadca.org/comprehensive-addiction-and-recovery-act-cara>. [Accessed 29 June 2017].
- ^{xlix} Drug Enforcement Agency, “DEA Reduces Amount of Opioid Controlled Substances to be Manufactured in 2017,” 4 October 2016. [Online]. Available: <https://www.dea.gov/divisions/hq/2016/hq100416.shtml>. [Accessed 29 June 2017].